

GOLF SWING PRACTICE DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

5 The present invention relates generally to golf, and more particularly, to a golf swing practice device.

2. Description of the Related Art

 Although the golf swing action looks simple, it actually requires many necessary standard swing postures to perform a standard accurate swing action. If the
10 golfer does not exactly comply with the standard swing postures, the golfer will fail to have sufficient strength to hit the golf ball and then the ball will be hit to travel astray from a predetermined direction. For example, the standard swing action includes steps of the address, the backswing, the downswing, the ball impact, the follow-through, and the finish and keeps the trajectory of the golf club head moving on the same swing
15 plane. Theoretically, the optimal swing plane is constructed by both of a connection line between the right or left shoulder of the golfer and the hitting point and a target line. If the golfer can swing the golf club to enable the club head to travel along the same swing plane each time, the golfer's swing action is very accurate and stable to enable the ball to be hit to travel exactly towards the target. On the contrary, if the golfer fails to
20 comply with the standard swing postures, the ball will be hit to travel in unexpected deviation or curvature.

 However, the aforementioned requirement of the standard swing action is too difficult to beginners. If none of coaches or experienced golfers is available to help the beginners to correct their swing actions, it is difficult for the beginners to learn the
25 accurate swing action on their own without any assistance. Hence, numerous kinds of

golf swing practice devices for helping the golfers to learn the accurate swing action are commercially available on current market.

An optimal golf swing practice device must meet four requirements as follows.

- 5 1. The angle of the swing plane can be freely adjustable.
2. While performing the accurate swing action, the trajectory of the golf club head will not depart from a predetermined swing plane.
3. The club head is freely movable on the predetermined swing plane. In other words, the trajectory of the club head will be variable in shape according to
10 different golfers who have different body shapes, postures, and timing of bending wrists while keeping on the same swing plane.
4. Performing full swing practice is available.

If any of the swing practice devices does not meet aforementioned four
15 requirements at the same time, those devices will not satisfy actual requirement and the golfers will be misguided to perform incorrect swing practice. However, currently commercially available golf swing practice devices primarily having guide rails usually satisfy only one or two of the aforementioned requirements to cause obstructions and blind points while practicing swing actions.

20 The currently commercially available golf swing practice devices that the guide rails are applied structurally include three types as follows.

1. The club is put on one single guide rail:

For example, U.S. Patent Nos. 5330192, 5429367, and 5441275 disclosed
25 such kind of the golf swing practice device. However, the swing practice

devices fail to keep the club head moving on a predetermined swing plane because when the golfer performs the swing practice, a fulcrum being defined on where the club shaft and the guide rail contact with each other, a point of application of force being defined on where the golfer holds the grip of the golf club, the interrelationship between the golfer's arm and the guide rail keeps changing to enable the angle between the club shaft and the guide rail to keep changing, such that the moving trajectory of the club head fails to keep on the predetermined swing plane.

2. The club is put between two guide rails:

For example, U.S. Patent No. 4071251 disclosed such kind of golf swing practice device, which includes a primary guide rail and a secondary guide rail disposed in front of a low section of the primary guide rail for swinging the golf club through between the two guide rails. However, such type of swing practice device still fails to keep the club head moving on the same swing plane.

3. A distal end of the club shaft is located on a circular guide rail:

Although such type of swing practice device can keep the club head moving on the same swing plane, i.e. a plane defined by the circular guide rail, it forms a single fixed circular swing trajectory that does not satisfy the actual golf swing trajectory formed according to different golfers' body shapes, arm lengths, timing of bending arms. Briefly, such type of swing practice device fails to satisfy all kinds of golfers.

SUMMARY OF THE INVENTION

The primary objective of the present invention is to provide an improved golf

swing practice device that ensures that the trajectory of a golf club head keeps on the same swing plane while the golfer swings the golf club to enable the golfer to feel and learn more optimal and accurate swing postures and that satisfies the golfers of various body shapes.

- 5 The secondary objective of the present invention is to provide an improved golf swing practice device that allows different trajectory of a golf club head while the club head remains on the same swing plane.

 The foregoing objectives of the present invention are attained by the improved golf swing practice device that is composed of a base frame, a guide hoop, a guide rail,
10 a slide member, and a training golf club. The guide hoop is mounted on the base frame and the golfers can stand behind the guide hoop to do swing practice. The trajectory of the guide hoop is positioned on a simulated plane, which slopes to enable a top side thereof facing forwards and upwards. The guide rail is slidably mounted on the guide
15 axle parallel to the simulated plane that the guide hoop is positioned and extending towards a direction substantially corresponding to a diametrical direction of the guide hoop. The slide member is slidably mounted on the guide rail to slide along the guide hoop and extends rearwards from the guide rail for a distance. The training golf club is provided with an end pivotably mounted on a rear end of the slide member and the other
20 end provided for the golfer's holding. An imaginary golf club head is positioned at where the training golf club is pivotably mounted on the slide member. When the golfer swings the training golf club for practice, the imaginary golf club head will be controlled to move on a plane parallel to the aforementioned simulated plane.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a preferred embodiment of the present invention;

FIG. 2 is an elevational view of the preferred embodiment of the present invention;

FIG. 3 is a side view of the preferred embodiment of the present invention;

FIG. 4 is a partially exploded view of the preferred embodiment of the present invention;

FIG. 5 is a sectional view taken along a line 5-5 indicated in FIG. 2;

FIG. 6 is a sectional view taken along a line 6-6 indicated in FIG. 3;

FIG. 7 is an elevation view of the preferred embodiment of the present invention at work, showing that the trajectory of an imaginary golf club head;

FIG. 8 is a side view of the preferred embodiment of the present invention at work, showing the trajectory of the imaginary golf club head; and

FIGS. 9 and 10 are elevational views of another preferred embodiments of the present invention, showing that a guide hoop has other shapes.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIGS. 1-3, a golf swing practice device 10 constructed according to a preferred embodiment of the present invention is composed of a base frame 20 located on the ground, a guide hoop 30 mounted in front of the base frame 20, a guide rail 40 slidably mounted behind the guide hoop 30, a slide member 50 slidably mounted behind the guide rail 40, a connector 60 pivotably connected to a rear end of the slide member 50, and a training golf club 70 having a distal end connected with the connector 60.

The base frame 20 is formed of a plurality of rod members connected together and includes a square bottom support 21 having a long side (hereinafter defined as a rear side) connected with an upright trapezoid back support 22. Three retractable rods 23a, 23b, and 23c extend forwards respectively from midsections of a top side and left and right sides of the back support 22. The retractable rod 23a is shorter than each of the retractable rods 23b and 23c. Three support arms 24a, 24b, and 24c are pivotably connected respectively with front ends of three retractable rods 23a, 23b, and 23c and extend towards the center of the guide hoop 30.

The guide hoop 30 is a continuous elliptical frame and is provided with two ends at a long axle thereof for being connected with distal ends of the two support arms 24b and 24c of the base frame 20, an end at a short axle thereof provided for being connected with a distal end of the support arm 24a of the base frame 20, and the other end at the short axle thereof provided for being spaced apart from the ground for a predetermined distance. In other words, the guide hoop 30 is supported at a front side of the base frame 20, and a standing space 25 is defined between the guide hoop 30 and the back support 22 of the base frame 20 for the golfer's standing inside with the back facing the back support 22 to perform swing actions. The trajectory of the guide hoop 30 is on the same plane, which refers to an elliptical plane defined by the guide hoop 30, and faces the standing space 25. In the meanwhile, the aforementioned plane slopes with a top side thereof facing upwards and forwards. For the golfer, the trajectory of the guide hoop 30 substantially corresponds to that of an imaginary golf club head of the training golf club 70 while swing the training golf club 70. The lengths of the three retractable rods 23a, 23b, and 23c are adjustable to change an angle of inclination of the guide hoop 30 to fit the golfer's body figure.

Referring to FIG. 4, the guide hoop 30 includes an I-shaped cross-section and

two opposite channels 31 positioned respectively at inner and outer peripheries of the elliptical frame, i.e. two opposite smooth sides thereof respectively face forwards and backwards. The three support arms 24a, 24b, and 24c are connected to a front side of the guide hoop 30.

5 The guide rail 40 is an elongated frame-like bar having a cross-section of substantially square frame and includes a T-shaped channel 41, two retaining portions 42, a hooking member 43, and a plurality of rollers 45. The T-shaped channel 41 extends along a long axle of the guide rail 40. The two retaining portions 42 are formed inside the T-shaped channel 41 and respectively abut two ends of the guide rail 40. The
10 hooking member 43 is fixed on an end of a side of the guide rail 40 opposite to an opening of the T-shaped channel 41 and has two crank-like members 44 symmetrical in shape. The two crank-like members 44 are positioned opposite to each other at a corresponding direction to the long axle of the guide rail 40, and are respectively in the shapes of two serial curvature of right angle to define a T-shaped space between the two
15 crank-like members 44. The rollers 45 are pivotably mounted on a distal end of each crank-like member 44.

 The guide rail 40 is connected to the guide hoop 30 by the hooking member 43, as shown in FIG. 5, i.e. the guide rail 40 is positioned behind the guide hoop 30 and the opening of the T-shaped channel 41 faces backwards; namely, the hooking member 43
20 faces forwards, the other side of the guide hoop 30 runs through the T-shaped space of the two crank-like members 44, distal ends of the two crank-like members 44 extend into the two channels 31 by engaging against inner peripheries of the two channels 31, and the rollers 45 engages against the channels 31, thereby preventing departure of the guide rail 40 from the guide hoop 30 and causing the guide rail 40 to slidably move
25 along the elliptical trajectory of the guide hoop 30. (Note: The three support arms 24a,

24b, and 24c are connected to the front side of the guide hoop 30 to keep a rear side of the guide hoop 30 and the channels 31 clear to cause no interference with the slidable movement of the guide rail 40.)

The long axle of the guide rail 40 is parallel to the plane defined by the guide
5 hoop 30, as shown in FIG. 3, and the extending direction of the long axle of the guide rail 40 corresponds to the diametrical direction of the guide hoop 30, as shown in FIG. 2. The guide rail 40 has an end, which is defined as an external end, connected to the guide hoop 30 to keep the guide rail 40 positioned completely on the elliptical trajectory of the guide hoop 30.

10 Referring to FIGS. 4-6, the slide member 50 includes a head portion 51, a body portion 52 extending perpendicularly from a side of the head portion 51, and two parallel yokes 53 fixed to a distal end of the body portion 52. A plurality of rollers 54 are rotatably mounted on the head portion 51. The head portion 51 of the slide member 50 is received the T-shaped channel 41 of the guide rail 40 and engages against the
15 T-shaped channel 41 by the rollers 54, and the body portion 52 extends out of the opening of the T-shaped channel 41, such that the slide member 50 can slidably move along the straight trajectory of the guide rail 40 and keep moving inside the T-shaped channel 41 without departure from the T-shaped channel 41 by the retaining portion 44. Referring to FIG. 3, the body portion 52 is perpendicular to the guide rail 40; when the
20 guide rail 40 slidably moves down to a lowest point the trajectory of the guide hoop 30, the distal end of the body portion 52, i.e. the two yokes 53, approaches the ground for a distance.

The connector 60 is annular in shape, mounted between the two yokes 53, and pivotably connected with the two yokes 54 on a diametrical axis thereof to pivot
25 relatively to the slide member 50. The diametrical axis of the connector 60 is

perpendicular to both of the body portion 52 of the slide member 50 and the guide rail 40, as shown in FIG. 6.

The training golf club 70 is a golf club without a golf club head at an end thereof coaxially connected to the annular connector 60 and has a handle 71 disposed at
5 the other end thereof provided for the golfer's holding.

When the golf swing practice device 10 is operated, the golfer stands inside the standing space 25, facing the guide hoop 30 and against the back support 22 (Note: According to the golfer's body shape or the space model of the present invention, the golfer's head or upper torso may be involved in the guide hoop 30), and then holds the
10 training golf club 70 by two hands to perform the swing actions. The present invention is structurally bilaterally symmetrical so as to accommodate the right-handed and left-handed golfers at the same time.

The position tat the distal end of the training golf club 70 is connected with the connector 60 is the imaginary golf club head; however, such position can be also
15 designed like a golf club head to enhance the simulative reality of the swing practice. During the process of performing the swing practice, the golfer exerts a force on the handle 70 to drive the slide member 50 to move, and then the slide member 50 drives the guide rail 40 to slide on the guide hoop 30, and meanwhile, the slide member 50 can slide on the guide rail 40. Referring to FIGS. 7 and 8, when the club 70 is positioned
20 upright, the head (connector 60) is positioned relatively in proximity of the external end of the guide rail 40, such as the lowest point p1 and the highest point p5. When the club 70 is positioned transversally, the head 60 is positioned relatively on a position p3 in proximity of an internal end of the guide rail 40. As a whole, the trajectory of the head 60 is substantially elliptical from an elevation view of FIG. 7. The trajectory of the head
25 60 keeps on a plane f1, i.e. the swing plane, from a side view of FIG. 8. The swing

plane f1 is parallel to a plane f2 defined by the guide hoop 30. The golfer can adjust the angle of the inclination of the guide hoop 30 or change the interrelationship between the golfer and the guide hoop 30 to incur a swing plane fits the golfer.

As stated above, the golf swing practice device of the present invention can
5 ensure the trajectory of the head to keep on the same plane to enable the golfer to feel and learn the optimal and most accurate swing action.

Alternatively, the guide hoop can be otherwise shape of annular frame or even discontinuous hoop. For example, in FIG. 9, the guide hoop 30' is a continuous circular frame; however, the trajectory of the guide hoop 30' is sloppy, such that the guide hoop
10 30' is not a circular frame from an elevation view. Referring to FIG. 10, the guide hoop 30'' is substantially elliptical with a long transversal axle and includes two arched sections 32, which are formed at a top bilateral side thereof and which curvature is not identical to the whole guide hoop 30. The trajectory of the guide hoop 30' substantially corresponds to that of the head while performing a general swing action.

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